CBARR Capability Overview

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Chemical Biological Application and Risk Reduction (CBARR) Business Unit

U.S. Army Edgewood Chemical Biological Center (ECBC)

Aberdeen Proving Ground, Md.

Mission and Vision

MISSION

Chemical Biological Application and Risk Reduction's (CBARR) mission is to perform global Chemical and Biological (CB) operations in a safe, secure and environmentally sound manner.

VISION

Be the recognized leader in providing integrated CB solutions for customers worldwide.

PERSONNEL PROFILE

200 field-deployable scientists, engineers, technicians and operators based out of Edgewood, Md. and Pine Bluff, Ark.

SPECIALIZED SKILLS/CERTIFICATIONS

- 135 Chemical/Biological Personnel Reliability Program-certified individuals
- Highly trained and experienced workforce - certified, vaccinated, cleared and mobile

CAPABILITIES:

- Deployable Lab Services
- Laboratory Support
- Field Operations
- Live Agent Operations
- Risk Management & Training

Fixed Laboratory Support

LABORATORY SUPPORT

ENVIRONMENTAL MONITORING LABORATORY (EML)

- High-throughput lab that provides CWA/BWA and inorganic chemical analysis in several matrices (air, water, soil, paint chips, wipes, organic liquids, fish tissue, demolition debris and unknowns)
- Robotic-assisted analysis used for high-throughput sample analysis for biological agent screening using polymerase chain reaction and electrochemiluminescent assays
- Supports environmental remediation investigations, health and safety monitoring, and demilitarization and testing operations for chemical agents and industrial compounds
- Capable of providing core laboratory services in conjunction with research, development, testing and evaluation missions
- CDC and USDA permitted for Select Agent
- Membership in EPA Environmental Response Laboratory Network (ERLN) and Water Lab Alliance (WLA)

Deployable Laboratory Support

DEPLOYABLE LAB SERVICES

NEAR REAL-TIME MONITORING

- Automated continuous monitoring systems provide near real-time detection of airborne contaminants to ensure worker safety
- Instruments are gas chromatography (GC) based; coupled with flame photometric or halogen-specific detectors
- Up to 32 systems can be linked and remotely controlled by computer
- Deployed in both mobile and fixed configurations which are designed and fabricated to satisfy site-specific requirements

ON SITE LAB ANALYSIS

- Fully functional, mobile laboratories perform critical on-site analysis of air, water and soil samples
- Utilizes state-of-the-art analytical instrumentation to monitor for chemical warfare agents as well as their breakdown products
- Can operate on either land power or on-board electrical generators
- Capable of 24-hour operation

Certifications

CERTIFICATIONS

ISO/IEC2005:17025

- Accredited by the American Association for Laboratory Accreditation (A2LA) in the field of Biological Testing
- Scope of accreditation includes qualitative ECL immunoassay testing and qualitative PCR analysis for biological warfare agents
- Scope of accreditation covers analysis performed in either their fixed or mobile laboratories

A2LA ACCREDITED
TESTING CERT #2866.01

QUALITY CERTIFICATIONS AND COMPLIANCES

- Compliant with Chemical Material Agency's(CMA) Laboratory and Monitoring Quality Assurance Plan (LMQAP) and Chemical Agent Standard Analytical Reference Material (CASARM) Quality Assurance Plan
- Undergo annual recertification with CASARM
- Participates in internal and external quality system audits

Field Operations/Systems

FIELD OPERATIONS

- Demolition of former CB process facilities
- Support to the U.S. Army Corps of Engineers in investigation and remediation of Formerly Used Defense Sites and active Installations
- Support to the United Nations, DTRA Cooperative Threat Reduction
- Environmental investigation for the U.S. Fish and Wildlife Service on Laysan Island, Hawaii

SYSTEMS

EXPLOSIVE DESTRUCTION SYSTEM (EDS)

- Transportable system designed to safely destroy range recovered, explosively-configured and chemical-filled munitions
- Operated on behalf of PM Non-Stockpile
- Deployed system in CONUS more than 10 times for emergency destruction of CW-filled munition

TRANSPORTABLE DETONATION CHAMBER (TDC)

- Transportable system design to provide high-throughput, safe destruction of chemical-filled, explosively-configured and conventional munitions
- Operated and maintained in partnership with CH2MHILL
- Deployed system CONUS and OCONUS for CW munition destruction operations with a maximum demonstrated daily throughput of 16 munitions

Live Agent Operations/ Risk Management

LIVE AGENT OPERATIONS

- U.S.-declared Single Small-Scale Facility under the CWC
- Conducts chemical agent synthesis and purification
- Conducts a wide variety of chemical process operations in support of the U.S. Chemical Demilitarization Program
- Supports the law enforcement community in CB screening of unknown samples

RISK MANAGEMENT

Provides comprehensive life cycle environmental, safety and health services in support of chemical and biological operations:

- Hazard analyses/risk assessments/development of standard operating procedures
- Environmental impact/pollution prevention
- Opportunity assessments
- Physical security assessments
- Air monitoring strategies for CB agents and industrial compounds
- Field testing and certification of engineering control systems
- Environmental, safety and health field inspections

Facilities

FACILITIES

THE CHEMICAL TRANSFER FACILITY (CTF)

- Single repository for the Army's research and development stocks of toxic chemical agents
- Single Small-Scale Facility (SSSF) under the Chemical Weapons Convention (CWC)
- Chemical Weapons Storage Facility (CWSF) and Chemical Weapons Destruction Facility

THE SAMPLE RECEIPT FACILITY (SRF)

- Nation's premier facility for the receipt and exploitation of uncharacterized samples
- Occupies 44,375 sq ft of analytical laboratories for chemical, biological and radiological assessment

THE ENVIRONMENTAL MONITORING LABORATORY

- Occupies 5,185 sq ft of laboratory space providing high- throughput CWA/BWA and inorganic chemical analysis using robotics in both mobile and stationary analytical lab constructs

PINE BLUFF ARSENAL (PBA) MONITORING BRANCH LABORATORY

- Fixed lab occupying 11,000 sq ft housing nine Real Time Analytical Platforms (RTAPs)
- Performs gas chromatography mass spectrometry (GC-MS) analysis, ICP analysis, and wet chemistry analysis

Test Facilities

APG-EA TESTING FACILITIES

MUNITIONS ASSESSMENT AND PROCESSING SYSTEM

- Fixed facility occupying 9,000 sq ft composed of specialized glove boxes, drilling and cutting hardware, explosive containment chambers and negative pressure filtration systems
- Designed to receive and process a wide variety of stable, explosively and non-explosively configured chemical munitions, and safely access and drain explosively configured chemical-filled munitions and detonate the empty munition bodies

PROTOTYPE DETONATION TEST AND DESTRUCTION FACILITY (PDTDF)

- Facility used to test and demonstrate technologies to destroy UXO and exploit potential CW/BW explosively configured unknowns
- Occupies 2,500 sq ft with a containment chamber ventilated at 5000 CFM to ensure capture of contamination within

Blast Containment Chamber inside the facility

- Multiple Vapor Containment Structures (VCS) available on site

LARGE AREA STORAGE AND OPERATIONS SITE (LASO)

- Environmental shelter
- Two C-130 Hercules aircrafts
- Multiple configurations allow for testing interior and exterior aircraft decontamination

Industry Partnerships

TECHNOLOGY TRANSFER

CBARR utilizes Cooperative Research and Development Agreements (CRADA) and Test Service Agreements (TSA) to form unique partnerships with Industry leaders.

Technology Support Agreement (TSA)

- Provides a means for the private sector to test their technologies and to leverage other ECBC services, facilities and equipment.

Cooperative Research and Development Agreement (CRADA)

- Provides the mechanism for private industry to collaborate with Army research and development activities.
- Federal agencies can accept funding under a CRADA to perform research or development of benefit to the CRADA partner.

Success Stories

ALBANIA CHEMICAL WEAPONS ELIMINATION (DTRA)

- Provided sampling and characterization of Albania CW Stockpile (2005 - 2007)
- Conducted safety and process analyses
- Over 38,000 hours deployed
- Over 5,000 air samples analyzed

ALBANIAN LABORATORY CHEMICAL DESTRUCTION

- ECBC mobilized destruction and verification equipment at the Armed Forces Laboratory in Tufine, Tirana. (2012)
- Conducted initial CW assessment and post destruction verification to less that 0.1% starting concentration.

BLUE GRASS TON CONTAINER NEUTRALIZATION (ACWA)

- Chemical Agent Transfer System
- Transferred the contents of the ton containers into a 20-gallon reactor and neutralized the agent through hydrolysis
- Provided all site support (electrical generators, mobile laboratory, air monitoring and filtration systems)
- Neutralized approximately 137 gallons of agent (December 2008)

More Success Stories

U.S. ARMY CORPS OF ENGINEERS

- ECBC has provided chemical/biological analysis of environmental samples, chemical agent filtration systems and vapor containment structure erection and certification.
- Remediation and site investigations at Formally Used Defense Sites (FUDS) to include sites in Alabama, Florida, Oklahoma, Hawaii, New Jersey, Kansas, Guam, Virgin Island and Washington D.C.

HAWAII UNDERSEA MUNITIONS MATERIAL ASSESSMENT (HUMMA) PROJECT

- Provided on board capability in CW monitoring, analytical analysis, and decontamination operations
- Analyzed hundreds of sediment, water and biota sample on board for CW and degradation products

TRANSPORTABLE DETONATION CHAMBER (T-30) DEPLOYMENT (U.S. ARMY COE)

- Remediation project included on-site destruction of conventional Naval non-chemical munitions at the Port of Seattle
- First time the 160,000-pound Transportable Detonation Chamber T-30 was deployed to the west coast
- Project proved CBARR's ability to safely secure an environmentally sound operating site in one of the nation's busiest ports

More Success Stories

AUSTRALIAN DEPARTMENT OF DEFENSE INVESTIGATION AND DESTRUCTION AT COLUMBOOLA, QUEENSLAND

- Supported assessment and conducted destruction operations on recover 144 x 75 mm HD filled munitions using explosive destruction technology
- Supported investigative operations to include excavation and environmental sampling and analysis
- Supported recovery and decontamination of 100 lb bomb
- ECBC began an assessment and investigation into the site used by the Defence Science Technology Office (DSTO), which previously operated with chemical agent in 44 buildings for nearly 50 years

FOOD ANALYSIS AND METHODOLOGY DEVELOPMENT (FERN)

- Accepted into FERN as a biological/chemical/radiological testing laboratory in January 2009September
- Participated in the Food Emergency Response Network (FERN) proficiency test for ricin detection in eight unpasteurized milk samples (Sept 2012)
- FERN facilitated partnership with South Dakota State University for chemical analysis of meat product. (January 2013)

Contacting CBARR

The Recognized Leader
in Providing CB Solutions

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